

Farmer demand for quality seed and adoption of improved varieties: The case of rice, legumes and oilseeds in the dry zone of Myanmar

ENUMERATOR INSTRUCTIONS. DEFINITION: Respondent refers to the Lead Decision or co-Decision Maker for Agricultural Activities in the family

First determine that the farmer meets the survey eligibility criteria, then read the complete information below to the respondent. Then ask the respondent if he/she has any questions, and answer these questions accordingly. If the respondent agrees to participate in the survey, please document their verbal informed consent prior to administering the questionnaire. If he/she disagrees, contact your field supervisor. If you cannot find your supervisor, continue on to the next interview.

Consent Statement

Hello. My name is _____ Enumerator code: _____ You are being asked to participate in a research study to understand farmer's adoption of different varieties of selected cereal, pulse, and oilseed crops, and demand for quality seeds of these varieties. This study is implemented by partners in the ISSD Myanmar programme, i.e. Wageningen University & Research Wageningen – Wageningen Centre for Development Innovation, Welthungerhilfe and the Department of Agriculture of the Ministry of Agriculture, Livestock and Irrigation of Myanmar, in collaboration with the Centre for Economic and Social Development, Michigan State University and the International Food Policy Research Institute.

If you participate in this study, you will, at no point, be under any obligation to make purchases of any kind. The information in this document is meant to help you decide whether or not to take part in this study. To make sure you are able to make a fully informed decision in this regard, please feel free to ask if you have any queries or concerns. You have been randomly selected for this study.

I would like to ask you some questions related to your crop production, use of inputs, seed and varietal use, and general characteristics of your household. As part of this study, I would also like to collect 20-30 seeds of each of the following crops, if you have been growing them on your farm for this past season or are planning to grow them in the next season — rice, black gram, mung bean, pigeon pea, chickpea, groundnut, sunflower and sesame. The information and seed samples you provide will be used to document the adoption of improved varieties and use of seed in this region, and identify factors that have contributed or that need to be addressed to increase the benefits for farmers from the adoption of improved varieties and quality seed. The interview will take approximately <60-90 minutes>. Your participation is voluntary. Your refusal to participate or to withdraw from the study carries no penalty or loss of any benefits. All information provided by you will be kept confidential. Your privacy will be protected to the maximum extent allowable by law.

Risks and inconveniences: We do not expect your participation in this study to pose any risk or inconvenience outside what might be expected during the normal course of activity.

Benefits: Your participation will help us, other organizations, and policy makers understand the demand for improved varieties and high quality seed.

Confidentiality: The study team will do all it can to ensure that information related to your private life is protected, including by conducting survey interviews in the privacy of your own home. By agreeing to participate in this study, you will be allowing the research team investigators, other study personnel, sponsors, institutional review board and any person or agency required by law to view your data, if required. However, your identity will not be revealed at any place, but instead your information will be represented by an identification number rather than by your actual name. At no point will your name be revealed.

We thank you for your co-operation. In case of any questions/conflicts, please contact a member of the survey staff, who will put you in touch with the research team. Alternatively, you may contact the following persons.

Contact person: _____; Phone number: _____ Date of Interview ___ / ___ / 2018

A1. Household Identification

TAP "GPS LOCATION "ON TABLET

A101	A102	A103	A104	A105	A106	A107	A108	A109A	A109B	A110
EA Number	Household ID from listing	Region	Township	Village Tract	Village Name	Name of respondent	Did the HH agree to participate in the survey?	Distance to nearest paved road		In which year did this household start farming?
		5 Sagaing 8 Magway 9 Mandalay	50102 Myinmu 50301 Monywa 80101 Magway 80202 Pwintbyu 90202 Madaya 90301 Kyaukse				1 YES 2 NO	NUMBER	1 METERS 2 KMS	YYYY 96 Several generations ago 97 DNK

	A111	A112	A113
		Did you grow [.. crop .] during the past agricultural year?	When did you first plant this crop?
		1 Yes 2 No→next crop	YYYY
Rice	01		
Sesame	02		
Groundnut	03		
Sunflower	04		
Green gram	05		
Black gram	06		
Pigeon pea	07		
Chickpea	08		

GENERAL NOTES:

Responses of 97 or 9997 signify "DOES NOT KNOW" or "DOES NOT REMEMBER"

All "99-Other, specify" responses have been postcoded. Any remaining responses of "99" pertain to cases where no further specification was given, or where the response did not seem relevant.

NOTES, THIS SECTION

GPS coordinates were difficult to capture on tablet.

A110. A household head, if living in the parents' house (deceased or not) may answer in terms of the household's history from the time his/her parents (and even before that) formed the household and not necessarily when he started being the head of a household.

A111. We asked about other crops grown in general but did not cover those in detail to reduce interview time.

A2. Roster of Household Members

A201	A202	A203	A204	A205	A206	A207	A208	A209	A210	A211	A212
						PERSONS 6 YEARS OLD OR OVER					
Name	Relationship to head of household	Sex	Age completed in years	Mark "1" if person is the respondent	Mark "1" if person is primary male decision maker and "2" if primary female decision maker	Educational attainment	Can [name] read or write in any language?	In the past 12 months, did [name.] do any salaried employment?	In the past 12 months, did [name.] do any wage labor?	In the past 12 months, was [name.] self-employed (nonfarm enterprise or resource extraction for sale)?	What was [name.]'s primary occupation?
	1 Self 2 Spouse 3 Child 4 Grandchild 5 Parent/Parent-in-law 6 Sibling 7 Brother-/sister-in-law 8 Other relative 9 Other nonrelative	1 Male 2 Female	Years			0-None 77-Kindergarten 88-Other nongovernment education 1-Grade 1 2-Grade 2 : : 11-Grade 11 12 Undergraduate 13 Bachelor's 14 Postgraduate 15 Monastic education	1-Yes 2-No	1-Yes 2-No	1-Yes 2-No		CODES BELOW
1											
2											

NOTES

A205. Many interviews were carried out with more than one household member present.

A206. Some households have identified two or more decision makers. We have seen this in scoping work/pretest in the Dry Zone and other regions. Some decisions are done jointly by several members of the household. Also when an elderly parent is declared as the household head, a child who may be the de facto head will not declare himself/herself as a lone decision maker.

A208. Results differ from the READZS survey (maybe overestimated) but are actually closer to census figures.

A212

- 1 Agricultural farmer
- 2 Agricultural laborer
- 3 Non-agricultural laborer (permanent)
- 4 Non-agricultural laborer (casual)
- 5 Craftsman
- 6 Professional or government job
- 7 Trader
- 8 Non-farm salaried employment
- 9 Self-employed nonfarm enterprise
- 10 Self-employed natural resource extraction
- 11 Student
- 12 Homemaker
- 13 Dependent
- 14 Unemployed, seeking work
- 15 Retired
- 16 Unpaid worker/volunteer
- 99 Other, sp.

D. Crops Cultivated in the Past Agricultural Year

1. Crops Cultivated in the Summer Season of 2017

D01A. Did your household cultivate any crops in the summer season of 2017? 1-Yes 2-No-> SKIP TO D02 | ____| D01B How many acres did you cultivate in total | _____|

D100	D101	D102	D103	D104	D105	D106	D107A	D107B	D107C	D107D	D107E	D107F	D107G	D107H	D107I
		Did you grow [. crop .] during the summer season of 2017?	How many varieties of the crop did you grow?	How many acres did you grow to crop across all plots in the summer season 2017?	On how many parcels did you plant [.crop.] during the summer season 2017?	Was [.crop.] intercropped or mixed-cropped in any of the parcels?	What percentage of cultivated area for the parcel was planted to [.crop.]? GUIDELINES FOR INFORMATION IN LINES TO BE GIVEN WAS INFORMATION GIVEN IN 1-PERCENTAGES OR 2-ACRES ____ RESPONDENTS EITHER GIVE IN ACRES OR PERCENTAGES. CAN WE DISCUSS WHERE TO POSITION QUESTION LATER.								
		1 Yes 2 No→next crop	Warning if more than 5	Warning if more than 20 96 INSIGNIFICANT		1 Yes 2 No	PARCEL 1	PARCEL 2	PARCEL 3	PARCEL 4	PARCEL 5	PARCEL 6	PARCEL 7	PARCEL 8	PARCEL 9
Rice	01														
Sesame	02														
Groundnut	03														
Sunflower	04														
Green gram	05														
Black gram	06														
Pigeon pea	07														
Chickpea	08														
Other crops	09														
Other crops	10														

2. Crops Cultivated in the Monsoon Season of 2017

D02. Did your household cultivate any crops in the monsoon season of 2017? 1-Yes 2-No-> SKIP TO D03 | ____|

Table similar to previous table Variable names D201-D107I, change Summer Season 2017 to monsoon 2017

3. Crops Cultivated in the Winter Season of 2017/18

D03. Did your household cultivate any crops in the winter season of 2017/18? 1-Yes 2-No-> SKIP TO SECTION E | ____|

Table similar to previous table Variable names D301-D307I, change Summer Season 2017 to Winter Season 2017/2018

The enumerators all had a parcel notebook that had a clear template of information to be entered. Doing a notebook allowed the respondent to keep track of information reported on his parcel as he answers questions. The information on the parcel notebook (which crops are on which parcels) have not been digitized. They were not entered on tablet on the spot owing to the time it takes to enter information.

The parcel columns were used here by enumerators to sort out intercropping issues as needed.

E. Varieties Cultivated in the Past Agricultural Year, By Season, *continued*

1. Varieties Cultivated in the Summer Season of 2017, *continued*

E102	E103	E120A	E120B	E120D	E121A	E121B	E121D	E122A	E122B	E122D	E123A	E123B
Crop	Variety serial no.	Of the amount you harvested, what was the quantity of [.variety.] that you sold?			What was the price of your major sale of this variety? STATE			What was the quantity of [.variety.] that you kept for own-consumption?			What was the quantity of [.variety.] harvested that you kept as seed? STATE - DRIED ONLY	
1-Rice 2-Sesame 3-Groundnut 4-Sunflower 5-Green gram 6-Black gram 7-Pigeon pea 8-Chickpea		Quantity SKIP TO E121A IF ZERO	<u>UNIT</u> 1 Rice Basket 2 100 Baskets 3 Pyi 4 Bag (1.5Bsk) 5 Bag (2.5 Pyi) 6 Viss 7 Barrel 8 10-gallon 9 5-gallon 10 3-gallon 99 Other, speci.	<u>STATE</u> 1 Fresh 2 Dried with shell 3 Dried w/o shell 4 Oil I	<u>Unit</u> 1 Rice Basket 2 100 Baskets 3 Pyi 4 Bag (1.5Bsk) 5 Bag (2.5 Pyi) 99 Other, specify	<u>UNIT</u> 1 Rice Basket 2 100 Baskets 3 Pyi 4 Bag (1.5Bsk) 5 Bag (2.5 Pyi) 6 Viss 7 Barrel 8 10-gallon 9 5-gallon 10 3-gallon 99 Other, spec	<u>STATE</u> 1 Fresh 2 Dried with shell 3 Dried w/o shell 4 Oil	Quantity SKIP TO E123A IF ZERO	<u>UNIT</u> 1 Rice Basket 2 100 Baskets 3 Pyi 4 Bag (1.5 Bsk) 5 Bag (2.5 Pyi) 99 Other, specify	<u>STATE</u> 1 Fresh 2 Dried with shell 3 Dried w/o shell 4 Oil	Quantity SKIP TO NEXT VARIETY44	<u>UNIT</u> 1 Rice Basket 2 100 Baskets 3 Pyi 4 Bag (1.5Bsk) 5 Bag (2.5 Pyi) 6 Viss 7 Barrel 8 10-gallon 9 5-gallon 10 3-gallon 99 Other, spec
	1											
	2											

NOTES

1. A variable E123D was added for the state in which the seed was reported.

The following codes were used:

2 Seed with shell/husk
3 Seed w/o shell/husk

2. Varieties Cultivated in the Monsoon Season of 2017

Table similar to previous table Variable names E201 to E223B, change Summer Season 2017 to Monsoon 2017

3. Varieties Cultivated in the Winter Season of 2017/18

Table similar to previous table: Variable name E301 to E323B, change Monsoon Season 2017 to Winter 2017/18

NOTES

2. There are no specific columns to put production stocks that households still expect to sell, remain unsold, or are intended as gifts such that the quantity of production minus the sum of the quantities sold, reserved for own consumption and seed, result in positive amounts. The high levels also recorded for quantity reserved for own-consumption suggest that the unsold or inventory have been recorded in this column.

3. For oilseeds, the conversion to oil depends on the oil content and quality of the seed, variety. It is especially variable in the case of groundnuts. The constant conversion factor may not be the one that applied to the household.

F. Varieties Cultivated in the Past Agricultural Year

1. VARIETIES USED UNIQUE VARIETY NAMES REGARDLESS OF HOW MANY TIMES THIS WAS PLANTED IN THE PAST 3 SEASONS

F101	F102	F103	F104	F105	F106	F107	F108A	F108B	F109	F110A	F110B	F110C
Crop	Variety code	You mentioned that you cultivated [E104, E204, E304] varieties of the crop [D101] in the past agricultural year...	Who in the household chose this variety?	When did HH first become aware of this [.variety.]?	How did HH become aware of this [.variety.]?	When did HH first use this [.variety.] on your farm?	What were the main reasons for making the decision to use [.variety.] when you first used it on your farm?		What was the seed source of this [.variety.] when you first used it?	Was the seed ...?		
1-Rice 2-Sesame 3-Groundnut 4-Sunflower 5-Green gram 6-Black gram 7-Pigeon pea 8-Chickpea			ID 95 More than 1 HH member 96 From outside the HH	YEAR	CODES BELOW	YEAR	1 st Reason CODES BELOW	2nd Reason CODES BELOW	CODES BELOW	PACKAGED 1 Yes 2 No	LABELLED 1 Yes 2 No	CERTIFIED 1 Yes 2 No
	1											
	2											

F101	F102	F111A	F111B	F111C	F112A	F112B	F112C
Crop	Variety code	What are the characteristics of this variety that you like the most?			What are the characteristics of this variety that you dislike the most?		
		CODES ON THE SIDE; 98-N/A			CODES ON THE SIDE; 98-N/A		
		1 st	2 nd	3 rd	1 st	2 nd	3 rd
	1						
	2						

F111 1=high yield 2=Insect/disease resistant 3=Drought tolerant 4=Flood tolerant 5=Early maturity/crop cycle 6=? 7=Easy soil growing conditions	8=good texture 9=Size, color, shape 10=good taste, 11= high processing quality 12=high market demand 13=Need less fertilizer 14=Easily threshed 98 N/A 99=Others (Specify)	F112 1= Low yield 2=Insect/disease sensitiveness 3=Drought sensitiveness 4=Flood sensitiveness 5=Late maturity/crop cycle 6= 7=difficult soil growing conditions 8=poor texture	9=Size, colour, shape 10= bad taste 11=low Processing quality 12=low market demand 13=Need much fertilizer 19= difficult to thresh 98 N/A 99=Others (Specify)
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F106 1 Observed in another farmer's field 2 Observed in a demonstration plot organized by extension officer 3 Observed in a demonstration plot organized by DAR/government 4 Heard from agent of seed company 5 Heard from trader 6 Read in newspaper or magazine 7 Radio/TV 8 Internet 9 NGO/Project 98 Does not know/remember 99 Other, specify	F108A, F108B 1 Higher yields 2 Market considerations/ Promoted by traders 3 No other varieties available 4 Promoted by neighbors 5 Promoted by government 6 Tradition of growing this variety 7 Variety is suitable for farm conditions 8 Cannot afford other available varieties 9 Do not know of any other varieties 97 Not applicable (use only for Reason 2) 98 Does not know 99 Other, specify	F109 0 Saved from previous harvest 1 Freely received from neighbors or relatives 2 Purchased from seed company 3 Purchased from neighbor farmers 4 Purchased from seed input supplier 5 Purchased from local market/trader 6 Purchased from farmer-seed producer 7 Purchased from organization-seed producer 8 Purchased from NGO 9 Purchased from Gov't 10 Freely received from Gov't 11 Freely received from NGO 12 Freely received from others, spec. 97 Does not know/remember 99 Other, specify
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F. Varieties Cultivated in the Past Agricultural Year, continued

3. SEED QUALITY AND ACCESS TO GOOD QUALITY SEED, continued

F101	F102	F308	F309	F310	F311	F312A	F312b	F313A	F313B	F314A	F314B
Crop	Variety serial no.	Do you have easy access to good quality seeds of this [<i>variety</i> .] if you wanted to purchase it?	Where would you purchase good quality seed of this [<i>variety</i>]?	Are you planning to grow this [<i>variety</i>] again?	What would be the source of seed the next time you plant this [<i>variety</i>]?	What is the current purchase price of the seed of this [<i>variety</i>]?		What was the highest purchase price of the seed of this [<i>variety</i>] in the past 12 months		In which month was the seed price of this variety highest and lowest in the past 12 months?	
1-Rice 2-Sesame 3-Groundnut 4-Sunflower 5-Green gram 6-Black gram 7-Pigeon pea 8-Chickpea		1 Yes 2 No->F310 97 DNK	CODES BELOW	1 Yes 2 No-> F312A 97 DNK	CODES BELOW	Kyats 97 DOES NOT KNOW SKIP TO F313A	PER 1 Rice Basket 2 100 Baskets 3 Pyi 4 Bag (1.5 Bsk) 5 Bag (2.5 Viss) 6 Viss 99 Other, specify	Kyats 97 DOES NOT KNOW SKIP TO F308	PER 1 Rice Basket 2 100 Baskets 3 Pyi 4 Bag (1.5 Bsk) 5 Bag (2.5 Viss) 6 Viss 99 Other, specify	1 January 2 February : 12 December 96 Price did not vary 97 Does not know 98 N/A HIGHEST	1 January 2 February : 12 December 96 Price did not vary 97 Does not know 98 N/A LOWEST
	1										
	2										

F205, F309, F311
 0 Saved from previous harvest
 1 Freely received from neighbors or relatives
 2 Purchased from seed company
 3 Purchased from neighbor farmers
 4 Purchased from seed input supplier
 5 Purchased from local market/trader
 6 Purchased from farmer-seed producer
 7 Purchased from organization-seed producer
 8 Purchased from NGO
 9 Purchased from Gov't
 10 Freely received from Gov't
 11 Freely received from NGO
 12 Freely received from others, spec.
 97 Does not know/remember
 99 Other, specify

G. Varieties No Longer Grown

G101	G102	G101	G102
Crop	Have you ever used a [..crop..] variety that you have stopped planting? 1 Yes 2 No 3 No, never planted [crop]	Crop	Have you ever used a [..crop..] variety that you have stopped planting? 1 Yes 2 No 3 No, never planted [crop]
01 Rice		05 Green gram	
02 Sesame		06 Black gram	
03 Groundnut		07 Pigeon pea	
04 Sunflower		08 Chick pea	

G103	G104	G105	G106A, G106B, G106C		
Crop	What was the name of the variety that you have stopped using?	In what year did you stop using this variety?	For what reasons did you stop using this variety		
1-Rice 2-Sesame 3-Groundnut 4-Sunflower 5-Green gram 6-Black gram 7-Pigeon pea 8-Chickpea	Name of variety 97 DOES NOT KNOW 99 OTHER, SPECIFY	YEAR	1 Low yield 2 Susceptible to diseases 3 Susceptible to pests 4 Decreased market demand 5 Found better alternative variety 6 Seed not available 7 Variety not suitable for soil growing conditions 8 High input requirements (incl labor) 9 Lack of access to land 98 N/A 99 Other, specify		
			1 st reason	2 nd reason	3 rd reason

NOTE:

This section was implemented at the crop-level instead of variety-level.

Section I. Seed Sources

	I101A	1101B	I101	I101	1101E	I102A	1102	I102	1102	1102E	I103A	1103	I103	I103	1103E	I101E, I102E, I103E, I104E, I105E, I106E 1 No access 2 Have better seed source 3 Expensive 4 Do not trust seed quality/source 5 Not aware of this type of seed source 6 Seed not available when needed 99 Other, specify
Crop	Have you ever used or purchased seed for [...crop..] from an agro-dealer/ input supplier ?	Was the seed...			Why not?	Have you ever used or purchased seed from a producer or a farmer group that is trained to produce seed	Was the seed...			Why not?	Have you ever used or purchased seed a government seed farm ?	Was the seed...			Why not?	
	1 Yes 2 No>I102A	PACKAGED 1 Yes 2 No	LABELLED 1 Yes 2 No	CERTIFIED 1 Yes 2 No	CODES TO THE SIDE	1 Yes 2 No>I104A	PACKAGED 1 Yes 2 No	LABELLED 1 Yes 2 No	CERTIFIED 1 Yes 2 No	CODES TO THE SIDE	1 Yes 2 No>I106A	PACKAGED 1 Yes 2 No	LABELLED 1 Yes 2 No	CERTIFIED 1 Yes 2 No	CODES TO THE SIDE	

	I104A	1104B	I104C	I104D	1104E	I105A	1105B	I105C	1105D	1105E	I105A	1105B	I105C	I105D	1105E	I111	I112
Crop	Have you ever used or purchased from a trader	Was the seed...			Why not?	Have you ever used or purchased seed from a grain vendor in the market	Was the seed...			Why not?	Have you ever used or purchased seed from an NGO or a development program	Was the seed...			Why not?	Do you plan to use certified seed next time you plant [crop]?	Why not?
	1 Yes 2 No>I105A	PACKAGED 1 Yes 2 No	LABELLED 1 Yes 2 No	CERTIFIED 1 Yes 2 No	CODES TO THE SIDE	1 Yes 2 No>I106A	PACKAGED 1 Yes 2 No	LABELLED 1 Yes 2 No	CERTIFIED 1 Yes 2 No	CODES TO THE SIDE	1 Yes 2 No>I107A	PACKAGED 1 Yes 2 No	LABELLED 1 Yes 2 No	CERTIFIED 1 Yes 2 No	CODES TO THE SIDE	1 Yes→ next Section 2 No 97 DNK	CODES BELOW

I112 1-Distance to the nearest shop to buy quality seed 2-Don't know where to buy it 3-Lack money to buy quality seed (too expensive) 3-Lack of credit to buy quality seed 4-Lack of labor to plant quality seed	5-Lack of adequate amount of land (no access to land) 6-Quality seed is not worth the price 7-Quality seed cannot be replanted 8-Lack of information about the benefits of quality seed 9-Distrust related to certification label	10-Inadequate package size 11-Seed not in the market at the time of planting 12-Low quality of the soil 13-No relevant answer (respondent is talking about grain) 99-Others (specify)
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N: Seed type/source preferences

L101 Crop | _____ |

ENUMERATOR: We would now like to ask you a set of questions about your PERCEPTION of the seed quality from different sources for [..CROP..]. For this set of questions, we would present to you 3 sources of seed that you can potentially obtain seeds for planting purposes. Assume that the seeds from all these sources are of the SAME VARIETY but the quality may be different. For each list, we would like to know which source you think is the best quality, and which is the worst quality.

N101.		Best Quality	Worst Quality
The best and worst quality seeds are....	4. Seed from a seed producer or a farmer group that is trained to produce seed but seed has no label		
	2. Seed from agro-dealer/company that comes in a package with a label		
	1. Own saved seed		

N102		Best Quality	Worst Quality
The best and worst quality seeds are....	2. Seed from agro-dealer/company that comes in a package with a label		
	3. Seed from a grain vendor in the market that you can buy in bulk and comes with no label		
	5. Seed from a trader that you can buy in bulk and comes with no label		

N103		Best Quality	Worst Quality
The best and worst quality seeds are....	4. Seed from a seed producer or a farmer group that is trained to produce seed but seed has no label		
	3. Seed from a grain vendor in the market that you can buy in bulk and comes with no label		
	6. Seed from government seed farm that comes in package or in bulk		

N104		Best Quality	Worst Quality
The best and worst quality seeds are....	5. Seed from a trader that you can buy in bulk and comes with no label		
	7. Seed from an NGO or a development program		
	4. Seed from a seed producer or a farmer group that is trained to produce seed but seed has no label		

N105		Best Quality	Worst Quality
The best and worst quality seeds are....	6. Seed from government seed farm that comes in package or in bulk		
	5. Seed from a trader that you can buy in bulk and comes with no label		
	1. Own saved seed		

N106		Best Quality	Worst Quality
The best and worst quality seeds are....	7. Seed from an NGO or a development program		
	6. Seed from government seed farm that comes in package or in bulk		
	2. Seed from agro-dealer/company that comes in a package with a label		

N107		Best Quality	Worst Quality
The best and worst quality seeds are....	3. Seed from a grain vendor in the market that you can buy in bulk and comes with no label		
	7. Seed from an NGO or a development program		
	1. Own saved seed		

